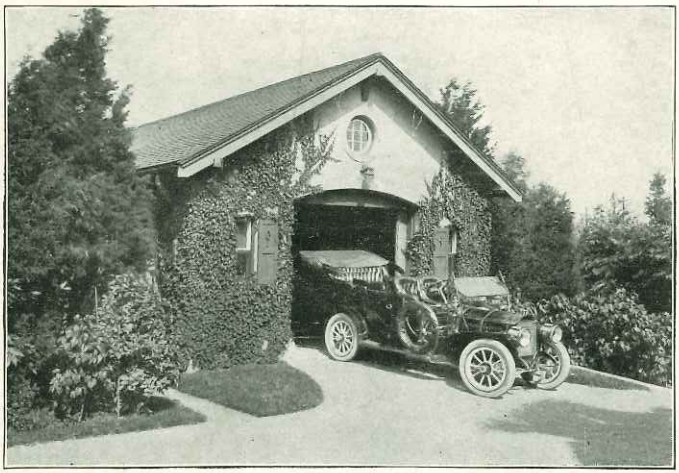
95
131 M1
249
B
7202

SMALL CONCRETE GARAGES



Published by

Portland Cement Association

111 West Washington Street

Chicago

SEPTEMBER 1, 1916

"Concrete for Permanence"

Portland Cement Association
710 Union Trust Building
Parkersburg, West Va.
Washington, D. C.

SMALL CONCRETE GARAGES

FIGURES recently made public by several automobile manufacturers indicate that about 70 per cent of all automobiles now manufactured go to the rural districts—to the farm and the small town. And because of the necessary presence of gasoline and oils required for

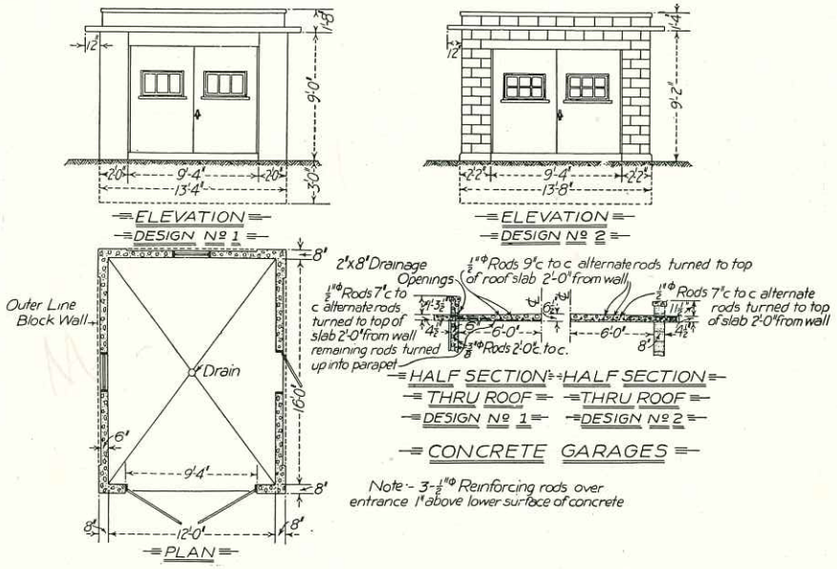
Concrete block can be made in almost endless variety and are admirable units for concrete garage construction.

car operation and maintenance, there has been considerable increase in the fire menace wherever an automobile or motor truck has been added to one's personal property.

Some cities and towns have passed ordinances with a view to regulating the housing of motor cars and providing storage for gasoline, so there are a few car owners who enjoy some safeguards against the menace of the automobile. Generally, however, the rural dweller, particularly the farmer, is left to his own devices or choice in protecting himself and

his property against the fire risk attendant upon housing an automobile on his premises.

Instead of being built of permanent fireproof materials, most garages in the past have been built of impermanent and thoroughly combustible ones—built to increase fire risk rather than reduce it. Some day insurance companies and fire protection associations may be able to influence legislation that will solve the garage problem from the standpoint of compelling that all structures where automobiles are housed shall be


ELEVATION
DESIGN Nº 1
ELEVATION
DESIGN Nº 2
2'x8' Drainage Openings
Outer Line Block Wall
Drain
Rods 7"c to c alternate rods turned to top of slab 2'-0" from wall remaining rods turned up into parapet
Rods 9"c to c alternate rods turned to top of roof slab 2'-0" from wall
Rods 7"c to c alternate rods turned to top of slab 2'-0" from wall
Rods 2'-0" c. to c.
HALF SECTION THRU ROOF DESIGN Nº 1
HALF SECTION THRU ROOF DESIGN Nº 2
CONCRETE GARAGES
Note:- 3-⅝" Reinforcing rods over entrance 1" above lower surface of concrete
PLAN

Design for small monolithic concrete garage, showing alternative construction by using concrete block.

built of fireproof materials. As a step toward anticipating this time, the plans and illustrations in this booklet show several types of garages that have been or may be built of concrete, in some one of the several ways in which this material can be used to secure fire-safe construction.

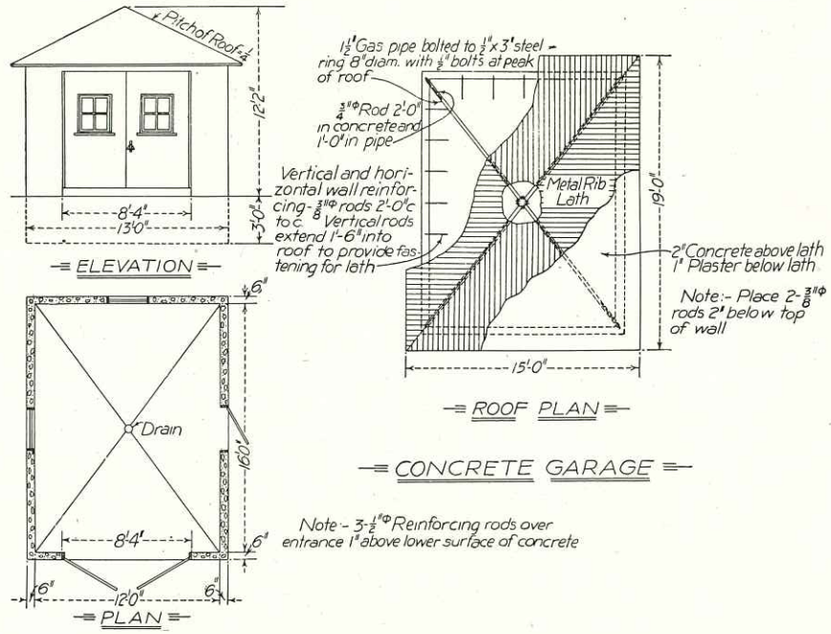
As will be seen from the accompanying reproductions of photographs, concrete may be applied in garage construction in several ways—monolithic, concrete block, stucco on metal lath supported by metal frame,

A simple stucco garage with living quarters provided above. Unless such a structure is built with fireproof floor for the second story, the full advantages of concrete are not secured.

Another example of the use of concrete block in garage construction. Two types of block are used in this structure to vary the effect.

to say nothing of concrete tile and concrete brick. Yet the full advantages of concrete from the standpoint of fire-safe construction are not realized unless the material is used to build the entire structure. When built two stories high so that living quarters are provided for a chauffeur and his family, fire-safe garage construction implies that the floor of the second story should be of concrete.

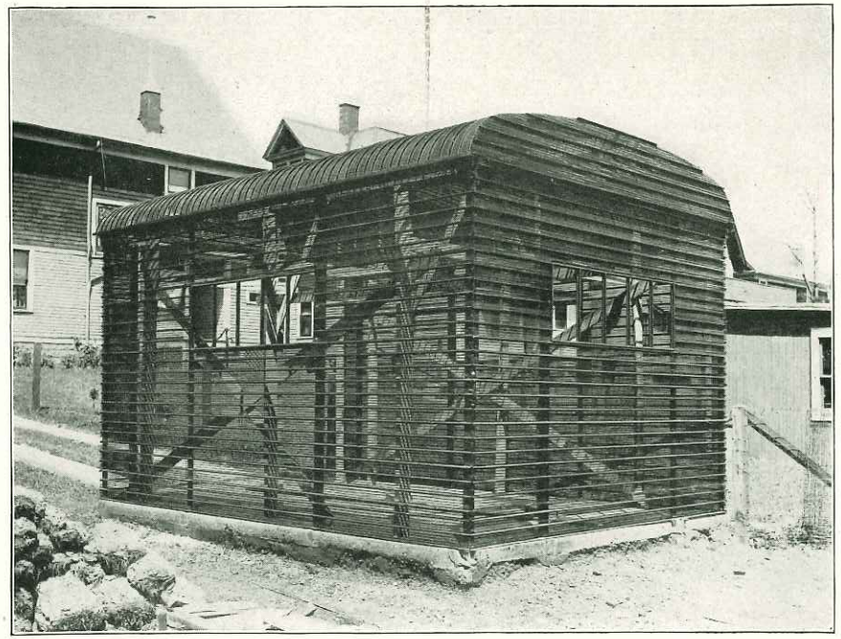
There is a peculiar combination of merit and adaptability in concrete. Structures built of it are not only fireproof but the architect or



Design for concrete garage with monolithic walls and roof construction of metal lath with concrete above and cement plaster below.

builder can reproduce many very pleasing types of architecture. Concrete means permanence and that means doing away with the annual expense of painting, repair and other maintenance which represents such a burden where impermanent construction is used.

Some have had the impression that concrete is costly as compared with other types of construction. As a matter of fact, conditions in the building materials line have been such that for a long time concrete

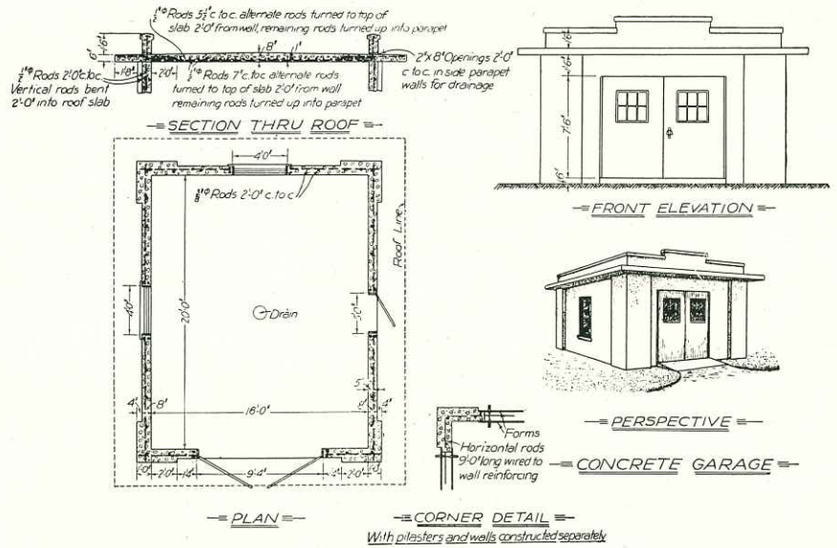


There are a number of types of so-called metal lath which serve as an admirable ground for stucco or cement plaster construction.

This is a view of the above structure as it appeared when finished.

structures have been built in many places for the same price as less durable construction would have cost. Where there have been occasional exceptions to this, the slight additional first cost has soon been offset by the saving in maintenance and insurance.

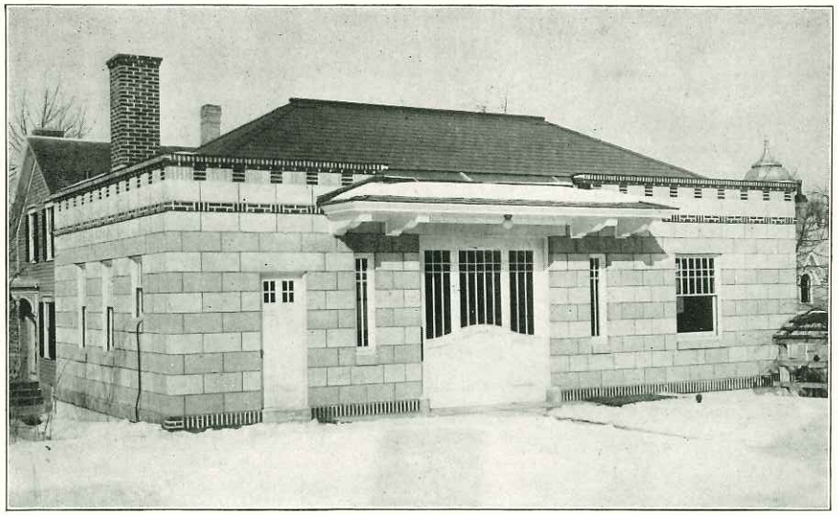
Everywhere increasing preference is being shown for concrete construction, not only in cities but in the rural districts. The farmer builds concrete dairy barns, concrete silos, concrete feeding floors, concrete tanks and troughs—in fact the farm uses of concrete are almost innumer-



Another suggested plan for plain monolithic concrete garage with pilaster effect at the corners.

able. Thousands of miles of permanent concrete pavement now provide 365-day-a-year roads through communities that formerly were all but inaccessible at certain seasons of the year owing to the bad condition of the highways. The fact that permanent concrete highways are increasing in mileage in strict accordance with their increase in popularity, suggests that the automobile should leave the permanent concrete highway only to enter the permanent, fireproof, concrete garage.

Plans shown in this booklet suggest designs for monolithic concrete, concrete block, and cement stucco on metal lath supported by steel frames.

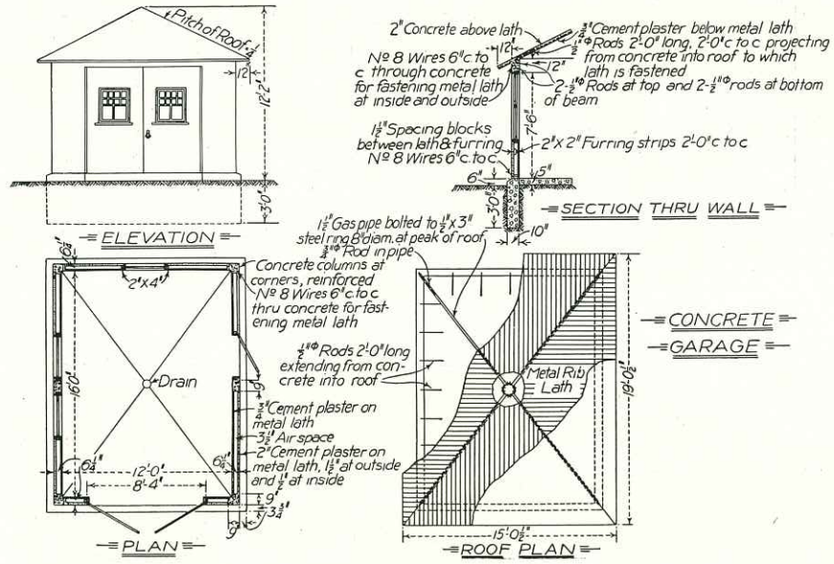


Concrete block can easily be made with surface finish that will duplicate almost any building stone. This garage is built of two types of faced block, a decorative effect being secured in part by the brick courses below and above.

This hillside setting and the thought which evidently was given to designing this simple little garage shows some of the architectural possibilities of concrete. The tile roof gives added security against fire from without.

These plans represent simple, straight-lined, easily constructed and relatively inexpensive structures, yet thoroughly pleasing ones. In each case if plans are followed, the resulting structure will afford protection from fire, both from within and from without.

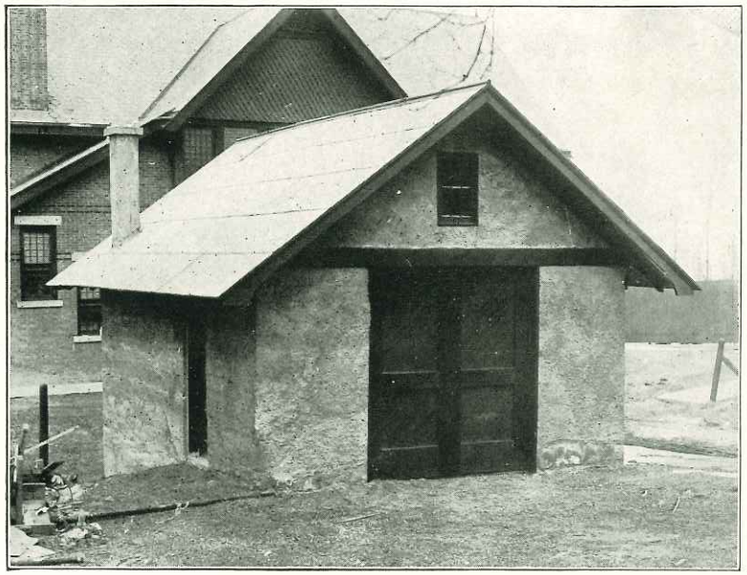
If careful thought is given to planning a garage, a number of desirable features may be incorporated in the structure that will not materially increase expense, yet will add considerably to the convenience of the structure. One of these consists of a repair pit of suitable dimensions,


Pitch of Roof
12"
2'-2"
3'-0"
ELEVATION
2" Concrete above lath
12"
№ 8 Wires 6" c to c through concrete for fastening metal lath at inside and outside
¾" Cement plaster below metal lath
⅜"Φ Rods 2'-0" long, 2'-0" c to c projecting from concrete into roof to which lath is fastened
12"
2-⅜"Φ Rods at top and 2-½"Φ rods at bottom of beam
1½" Spacing blocks between lath & furring
№ 8 Wires 6" c. to c.
2"x 2" Furring strips 2'-0" c to c
7'-8"
6"
5"
3'-0"
10"
SECTION THRU WALL
1½" Gas pipe bolted to ½"x 3" steel ring 8' diam. at peak of roof
⅜"Φ Rod in pipe
Concrete columns at corners, reinforced № 8 Wires 6" c to c thru concrete for fastening metal lath
2"x 4"
½"Φ Rods 2'-0" long extending from concrete into roof
Drain
¾" Cement plaster on metal lath
3½" Air space
2" Cement plaster on metal lath, 1½" at outside and ½" at inside
6½"
12'-0"
8'-4"
9"
3¾"
PLAN
CONCRETE GARAGE
Metal Rib Lath
19'-0½"
15'-0½"
ROOF PLAN

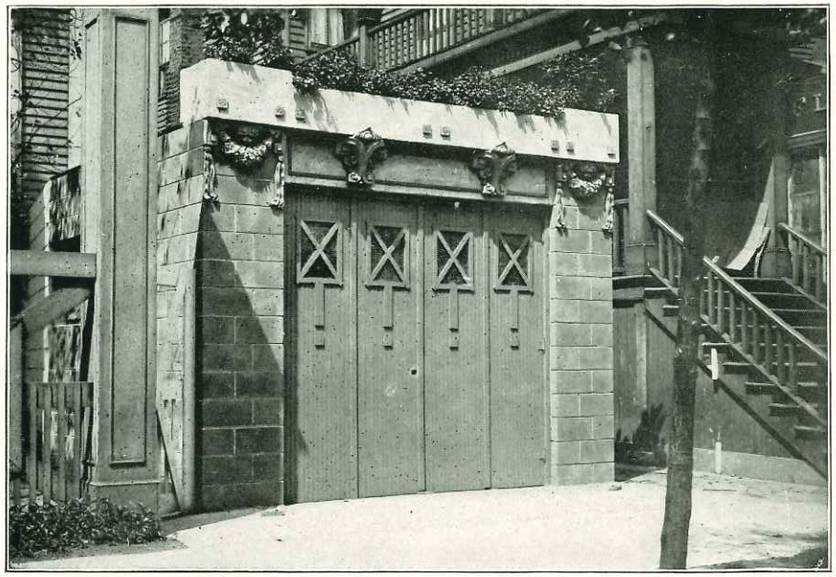
Design for concrete garage for cement plaster on metal lath.

over which a car can be run when necessary to go underneath to clean it or make light repairs.

At one end there should be a small work bench with vise and other necessary tools all placed in front of a window where good light will add to the ease of making repairs. For the same reason, windows should be low enough so that interior lighting will be low down on the car rather than up toward the ceiling. All-fireproof construction implies windows with wire glass in metal frames, and iron shutters outside, especially where the garage is located near other buildings. This secures effective



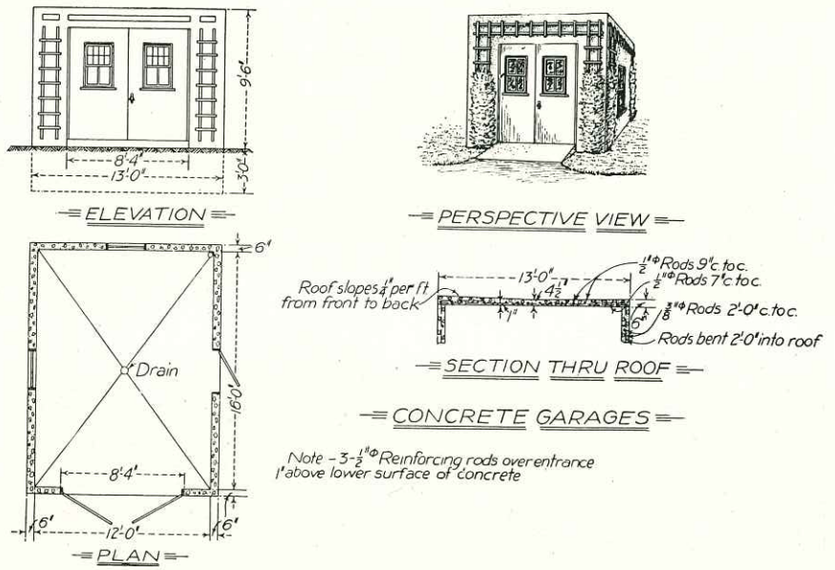
An inexpensive and plain, home-built monolithic garage. The poor roof on this structure, however, defeats most of the security that would have resulted if concrete had been used throughout.



This simple concrete block structure shows how individuality may be expressed with concrete.

protection from within and without in case of fire, and in view of the value of the average car, it is just as advisable to protect it from without as to protect other structures from the menace of the car. Fireproof doors also should be used.

Under no circumstances should a heating plant be placed in the structure. If near the house and there is a steam or hot water heating system in the residence, pipes may be extended to the garage. Otherwise a separate heating plant must be maintained outside of the garage. In



Design for simple straight-lined, monolithic concrete garage, suggesting how a decorative effect may be secured by training vines over the finished structure.

the country it may not be desirable to heat the structure. In the town or city, the residence and garage are usually located on the same lot, not far from each other, and therefore connection can readily be made to the house heating system if desirable.

A gasoline storage tank of steel, encased in 6 inches of concrete, and equipped with a gasoline pump, should be placed outside of the garage underground, and say, 10 feet distant from the structure. The top of this tank may be 2 feet below ground level. Pipe and pump connec-

tions should be a part of the tank equipment and should lead into the garage, although the inlet for filling the tank should be out of doors.

Open lights and fires must be avoided around the automobile on account of the prevalence of gasoline vapor. When artificial light is necessary, only electric lights should be used, and the wiring should conform to the requirements of the National Board of Fire Underwriters, so that

Another one-car block garage. Simple and inexpensive, yet more or less of a fire trap because of the wood doors, window frames and roof. This objection applies to most of the structures illustrated in this pamphlet. Windows on this garage are too high for good illumination on the car when necessary to make repairs.

danger of fire from improper electric circuits will be eliminated. When electric light is not available and the garage must be entered at times when artificial light is necessary, doors and windows should be opened for a few moments in order to release any accumulation of gasoline vapor, or an electric lantern should be used.

If the car is to be washed at times inside the garage, then a drain should be provided at a central point in the floor, which should be sloped

toward this drain, that in turn should be connected to a pipe leading to a sewer line or similar outlet. If the car is to be washed out of doors, then a small concrete-paved area at the front of the structure will serve as a convenient washing platform, and prevent a mudhole. Locker room for storing blankets and miscellaneous car accessories will suggest themselves as desirable conveniences to be provided. These, of course,

Although this garage is of pleasing appearance, the full advantages of concrete are not secured because the structure is not built fireproof throughout.

should not be considered as a part of the cost of the building but rather as the cost of gratifying individual tastes and desires.

Certainly an automobile or a motor truck represents sufficient investment to warrant protection against fire. Likewise the increased danger of fire that the automobile or motor truck introduces on a modern farm warrants housing such a vehicle in a structure that will confine fire that may break out in the garage to that structure only and thus prevent damage to nearby buildings.

Fireproof walls but far from fireproof elsewhere.

Any of the garages illustrated in the accompanying reproductions of plans can be built by the average experienced home worker, yet most persons will no doubt find it advisable to engage a rural contractor who specializes on concrete construction, to erect the structure selected. So far, the fireproof garage has been overlooked on the farm and has received scant attention elsewhere. "Safety First" suggests building one. Now is a good time.

Tennis Courts of Concrete
Concrete Septic Tanks
Concrete Fence Posts
Concrete Foundations
Concrete Feeding Floors, Barnyard Pavements and Concrete Walks
Concrete Troughs, Tanks, Hog Wallows, Manure Pits and Cisterns
Concrete Facts About Concrete Roads
Facts Every One Should Know About Concrete Roads

Are publications which may interest you. If you would like any of these booklets, write the Portland Cement Association, 111 West Washington Street, Chicago

"Concrete for Permanence"

"Safety First"

Why Overlook
"Safety First"
Use Concrete and Build Fire-Safe

Probably concrete will be best for that building you are now planning. To make certain, ask the Portland Cement Association, 111 West Washington Street, Chicago

"Concrete for Permanence"